CLAIMS

1. An adaptive pneumatic seat cushion (1) and backrest cushion (2) for vehicles and aeroplanes, characterised in that

   - it comprises a seat cushion (1) and a backrest cushion (2) which can be connected;
   - both the seat cushion (1) and the backrest cushion (2) comprise the following characteristics:
     - an airtight shell (3) filled with compressed air, which shell (3) is divided into an upper skin (4) and a lower skin (5);
     - there are a number of webs (6, 7) which are arranged between the upper skin (4) and the lower skin (5), thus interconnecting these;
     - of the webs (6, 7) the first ones are single webs (6) and the second ones are double webs (7) so that in each case at least one cavity (10) is formed between each two webs (7) and so that this cavity (10), of which there is at least one, is closed off from its surroundings in an airtight manner, except for an aperture for letting compressed air in or out;
     - the interior of the shell can be filled with compressed air at a pressure p_1; and
     - the cavities (10) can be pressurised with air pressures $p_2 > p_1$.

2. The pneumatic seat cushion and backrest cushion according to claim 1, characterised in that the double webs (7) are designed in such a way that

   - the first of the webs (7) is connected to the second web (7) along two strips (9), wherein the width of said first web (7) is narrower than that of the second web (7) by an amount which corresponds to the width of said two strips (9);
   - the second web (7) is connected both to the upper skin (4) and to the lower skin (5) along two strips (9); and
   - the narrow sides of two webs (7) each are interconnected along a strip (9) so that the cavity (10) between the webs (7) is closed off by the connections along the strips (9).

3. The pneumatic seat cushion and backrest cushion according to claim 1, characterised in that the cutouts of a double web (7) are designed so that they are all of the same size; that both directly adjacent to each other along a strip (9) are each connected to the upper skin (4) and the lower skin (5); and that the narrow sides of two webs (7) each are interconnected along a strip (9) so that the cavity (10) between the webs (7) is closed off by the connections along the strips (9).

4. The pneumatic seat cushion and backrest cushion according to claim 2 or 3, characterised in that the double webs (7) are interconnected at least once more along two strips (9) so that at least two cavities 10 are formed.

5. The pneumatic seat cushion and backrest cushion according to claim 2 or 3, characterised in that

at least on one end, strips (11) are cut to the cutouts for the double webs (7), which strips (11), interconnected by their borders, form air channels (12) for filling the cavities (10) with compressed air.

6. The pneumatic seat cushion and backrest cushion according to claim 5, characterised in that spreader elements (13) are inserted into the air channels (12), which spreader elements (13) prevent the air channels from becoming closed off as a result of kinking.

7. The pneumatic seat cushion and backrest cushion according to claim 2 or 3, characterised in that in selected pairs of double webs (7) two welding or gluing positions are provided across the longitudinal extension of said double webs (7), which welding or gluing positions extend along the entire height of the webs, thus defining two border regions (15) each and a middle zone (16) of the cavities (10), wherein the border zones (15) can be filled with compressed air, and the middle zone (16) is closed off from any supply of compressed air.

8. The pneumatic seat cushion and backrest cushion according to any one of claims 1 to 7, characterised in that all the connections between the webs (6, 7) and the shell (3), the latter being divided into an upper and a lower skin (4, 5), and furthermore of double webs (7) between themselves and the cutouts (11) for the air channels (12) are produced by the application of adhesive.

9. The pneumatic seat cushion and backrest cushion according to any one of claims 1 to 7, characterised in that all the connections between the webs (6, 7) and the shell (3), the latter being divided into an upper and a lower skin (4, 5), and furthermore of double webs (7) between themselves and the cutouts (11) for the air channels (12) are produced by way of welding.

10. The pneumatic seat cushion and backrest cushion according to claim 1, characterised in that each of the cavities (10) between the double webs (7) can individually be supplied with compressed air.

11. The pneumatic seat cushion and backrest cushion according to claim 1, characterised in that the cavities (10) between the double webs (7) can be selectively grouped together and can thus together be supplied with compressed air.

12. The pneumatic seat cushion and backrest cushion according to any one of claims 1 to 7, characterised in that the material for the shell (3), the webs (6, 7) and the cutouts (11) for the air channels (12) comprises plastic.

13. The pneumatic seat cushion and backrest cushion according to any one of claims 1 to 7, characterised in that the material for the shell (3), the webs (6, 7) and the cutouts (11) for the air channels (12) comprises a plastics-coated textile material.

14. The pneumatic seat cushion and backrest cushion according to claim 1, characterised in that seat cushion (1) and backrest cushion (2) can be attached to the seat structure by way of

adherence-type closures which are attached to the seat construction and to the seat cushion and backrest cushion by gluing.